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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/558,359

11/22/2006

Atsuhiko Ohta

AI 394NP

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7590

07/08/2009

RABIN & Berdo, PC

1101 14TH STREET, NW

SUITE 500

WASHINGTON, DC 20005

EXAMINER

YEE, DEBORAH

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/558,359	Applicant(s) OHTA ET AL.	
	Examiner Deborah Yee	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 25 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 8 to 12 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 8 and 10 to 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese patents 2003-166036 ("Ota") which was cited by Applicant in IDS filed November 25, 2005.

4. The English abstract of Ota discloses a steering rack made from steel bar that meets the steel bar recited by the claims and in paragraphs [0040] teaches further processing steel bar to form steering rack by drawing and cutting to form main body and rack teeth such that the tooth form section is induction hardened with a depth of D/4 to obtain a surface hardness of 600-800HV which encompasses and teaches the tooth form section surface hardness of 680 to 800HV recited in claim 8.

5. In addition, Ota in paragraph [0046] teaches rack teeth forming portion includes a teeth bottom portion subjected to induction hardening to achieve an effective case depth but does not specify the depth of 0.1 to 1.5 mm or 0.3 to 1.2 mm as recited by respective claims 10 and 11. Nevertheless, depth hardening would be matter of choice

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and routine optimization well within the skill of the artisan to select depending on the desired level of hardenability sought which is productive of no new and unexpected results.

6. In regard to claim 12, no residual ferrite contained in the teeth bottom portion in a 0.1 mm deep region from a surface thereof would be expected by Ota because prior art steering rack is formed with the same steel bar and is processed in substantially the same manner as claimed by Applicant.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 8 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claim 8 recites "steering rack formed using the steel bar and including a main body and a rack teeth forming portion" which does not clearly defined the present invention. It is recommended to use language such as ---steering rack formed using the steel bar to produce a main body and a rack teeth forming portion---

10. Claim 9 recites "a portion present at a depth of $(3/4)D$ (D is a diameter of the steel bar)" which does not clearly define the invention since D is the diameter of main body of steering rack and not of the steel bar, See paragraph [0069] in Applicant's specification.

Allowable Subject Matter

11. Claim 9 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter: The art of record does not teach or suggest a steering rack formed using a steel bar, as recited by the claim 9, wherein steering rack comprises a main body and a rack teeth forming portion wherein the portion of depth of $(3/4)D$ (D is diameter of the main body) from a surface that opposes the rack teeth forming portion in the radius direction is quenched and tempered in such a manner to produce a microstructure that satisfies conditions I), II) and III) as follows: a sum of tempered bainitic structure and tempered martensitic structure of 30 to 100% in area percentage II) a regenerated perlite structure accounts for 0 to 50% in area percentage III) a sum of the tempered bainitic structure, the tempered martensitic structure, and the regenerated perlite structure accounts for 50 to 100% in area percentage.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on monday-friday 6:00 am-2:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Deborah Yee/
Primary Examiner
Art Unit 1793

/DY/